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GAU 2733

AMENDMENT UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE
GROUP 2733
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Jean-Pierre LUGUERN, et al

Appln. No.: 08/941,236

Filed: September 30, 1997



Attorney Docket Q46923

Group Art Unit: 2733

Examiner: A. Boakye

Corres. and Mail
BOX AF

For: Congestion Control and Traffic Management System for Packet-Based Networks

REQUEST FOR RECONSIDERATION

ATTN: BOX AF

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

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REMARKS

Claims 1-5 remain in the application. Applicants note with appreciation the indication of allowable subject matter in claims 2 and 3. Reconsideration and allowance of the remaining claims are respectfully requested in view of the above amendments and the following remarks.

The examiner has objected to the use of the phrase "said factor". It is noted that there is clear antecedent basis in parent claim 1 for the "factor", and there is nothing ambiguous in the use of this term in claim 4. Accordingly, the objection to claim 4 is respectfully traversed.

Claims 1, 4 and 5 stand rejected under 35 U.S.C. 102(e) as anticipated by Hanson et al. This rejection is respectfully traversed.

The present invention is directed to a technique for controlling congestion on a virtual connection of a packet-based communications network. The virtual connection includes a source

node coupled to a source of packets to be sent over the network, and a destination node for receiving the packets sent over the network from the source node. A channel utilization factor is measured which relates to the degree of utilization of network resources as the packets are transmitted from source to destination, and this utilization factor is sent to a data rate controller which can then control the rate of packet transmission from source to destination in accordance with the measured channel utilization factor.

In a system contemplated by the present invention, the packets from various sources are time division multiplexed, and the multiplexed packets are then temporarily stored in a queue before being sent out over the virtual connection. The measured channel utilization factor takes into account the length of the queue as well as the time it takes to transmit the channel utilization factor to the data rate controller. This will prevent the queue from overflowing.

The language of particular interest to the issue here is the last paragraph of claim 1 which reads:

transmitting said factor to a data-rate management processor to control the rate at which the packets are sent upstream from said multiplexing, wherein said factor is based on the length of said queue and the time taken to transmit said factor to said data-rate management processor to prevent said queue from overflowing.

The "factor" is defined in the preceding paragraph as a factor "related to the rate at which packets are transmitted over said virtual connection towards said destination equipment." Hanson et al does not satisfy these limitations. More particularly, Hanson et al teaches congestion control in a packet-based network, and in Fig. 2 and as described at column 5, there is a virtual connection established between each source and each destination node, and each virtual

connection includes a respective queue 205. The queue 205 corresponds to the queue 205 in Fig. 2 of the present application, i.e., it is contained in the access module. In the system described in the present application, there is a further queue 325 after the packets from various customer equipment have been multiplexed. Note that claim 1 recites the measuring of the data rate of the multiplexed packets as well as the temporary storage of the multiplexed packets in a queue.

Thus, in order to satisfy claim 1, Hanson et al must teach a queue after the multiplexing packets from source equipment, and must further teach the measurement of a factor which is based on the rate at which packets are sent and which takes into account both the length of the queue and the time required to send the factor to the data rate management processor. It is also important to note that a purpose of the technique of the present invention is to prevent the queue from overflowing, and this requires control of the sending of packets at a point upstream of the queue. This is further specifically recited in claim 1.

Hanson et al does not discuss multiplexing. The examiner has alleged that this "is inherent in the source node to multiplex packets from source equipment block 102a to destination equipment block 102b (column 4, lines 24-28) as shown in figure 1." It is seen in Fig. 2 of Hanson et al that each CPE is provided with a respective path through the access module, and no multiplexing takes place until at least the transit module 112. in fig. 3 it is seen that a queue 305 is provided in the transit module 112, and it would appear that this would store multiplexed packets. However, it is important to note that for packets traveling in the direction from the source to destination, the queue 305 is located before the server 310 which implements the congestion control. Since the queue 305 in Hanson et al is located before the loop portion that is subject to channel utilization factor analysis, the factor determined by Hanson et al will not take the queue into account.

It is noted that the examiner has referred to lines 65-67 of column 5 as teaching that the channel utilization factor is based on the length of the queue. However, lines 65-67 of column 5 say nothing about the queue. There is mention earlier of the queue, but again no mention of including the queue in the calculation of the channel utilization factor.

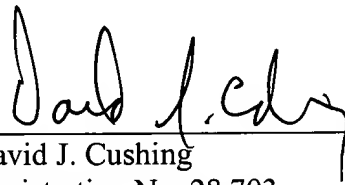
Accordingly, since the queue is positioned in Hanson et al such that it would not be inherently included in any efficiency calculation, and since there is no specific mention of taking into account the length of this queue, it is respectfully submitted that claim 1 cannot be anticipated by Hanson et al.

In view of the above, allowance of all claims is respectfully requested. If there are any issues remaining which the examiner believes could be resolved through an Examiner's Amendment or a Supplemental Response, the examiner is respectfully requested to contact the undersigned attorney at the local exchange indicated below.

Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

Respectfully submitted,


David J. Cushing
Registration No. 28,703

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